United States Department of the Interior

FISH AND WILDLIFE SERVICE
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June 4, 2021

To: Interested Parties

From: Scott Voss, Supervisory Fish Biologist, Red Bluff Fish and Wildlife Office

Subject: Biweekly report (May 21, 2021 - June 3, 2021)

Please find attached preliminary daily estimates of passage, 90% confidence intervals, and fork length ranges of unmarked juvenile salmonids sampled at Red Bluff Diversion Dam for the period May 21, 2021 through June 3, 2021. Race designation was assigned using length-at-date criteria.

Mean cumulative weekly passage of winter Chinook thru June 3 (week 22) for the last 18 years of passage data is 100.0% with one standard deviation measuring 0.0%.

This report also contains graphical displays of salmonid passage dating back to 2014 for comparison.

Please note that data contained in these reports is subject to revision as this data is preliminary and undergoing QA/QC procedures.

If you have any questions, please feel free to contact me at (530) 527-3043 ext 243.

Table 1.— Preliminary estimates of passage by brood-year (BY) and run for unmarked juvenile Chinook salmon and steelhead trout captured by rotary-screw traps at Red Bluff Diversion Dam (RK391), Sacramento River, CA, for the dates listed below. Results include estimated passage, peak river discharge volume, water temperature, turbidity, and fork length (mm) range in parentheses. A dash (-) indicates that sampling was not conducted on that date.

Date	Discharge volume (cfs) [1]	Water temperature (°C)	Water turbidity (NTU)	Estimated passage				
				BY20 Winter	BY20 Spring	BY20 Fall	BY21 Late-Fall	BY21 RBT
5/21/2021	9,641	15.0	1.7	0 (–)	373 (104 – 111)	29,578 (49 – 102)	0 (–)	831 (54 – 78)
5/22/2021	9,689	15.6	1.9	0 (–)	58 (108)	33,990 (50 – 102)	0 (–)	1,341 (53 – 79)
5/23/2021	9,351	15.9	1.8	0 (–)	0 (–)	20,771 (48 – 94)	115 (47)	969 (58 – 78)
5/24/2021	9,383	16.1	2.2	0 (–)	123 (108 – 115)	24,214 (49 – 102)	62 (37)	1,417 (28 – 91)
5/25/2021	9,543	16.1	1.8	0 (–)	120 (110)	29,577 (52 – 99)	60 (47)	897 (56 – 85)
5/26/2021	9,487	16.3	1.4	0 (–)	0 (–)	24,334 (55 – 90)	0 (–)	1,570 (29 – 85)
5/27/2021	9,346	16.7	1.6	0 (–)	62 (117)	15,046 (54 – 99)	0 (–)	1,375 (48 – 85)
5/28/2021	8,413	16.9	1.6	0 (–)	52 (112)	10,975 (49 – 99)	0 (–)	1,527 (42 – 97)
5/29/2021	7,829	17.6	1.4	0 (–)	0 (–)	6,670 (53 – 86)	52 (35)	1,604 (32 – 90)
5/30/2021	7,942	17.7	1.6	0 (–)	0 (–)	9,604 (50 – 90)	98 (33 – 38)	1,029 (47 – 90)
5/31/2021	8,144	17.8	1.7	0 (–)	0 (–)	9,957 (54 – 100)	0 (–)	1,027 (59 – 91)
6/1/2021	7,784	17.9	1.7	0 (–)	0 (–)	5,422 (52 – 96)	49 (44)	838 (24 – 82)
6/2/2021	7,649	18.1	1.6	0 (–)	0 (–)	3,249 (56 – 96)	87 (46 – 50)	702 (45 – 89)
6/3/2021	7,852	17.8	1.5	0 (–)	0 (–)	4,469 (56 – 87)	0 (–)	508 (46 – 95)
Biweekly Total [2]				**0**	**788**	**227,856**	**523**	**15,635**
Biweekly Lower 90% Confidence Interval				0	105	142,522	-42	9,379
Biweekly Upper 90% Confidence Interval				0	1,471	313,190	1,088	21,891
Brood Year Total				**2,096,218**	**1,436,729**	**11,002,556**	**4,506**	**57,657**
Brood year Lower 90% Confidence Interval				1,252,880	417,287	5,388,979	65	26,556
Brood year Upper 90% Confidence Interval				2,939,556	2,456,170	16,616,133	8,947	88,758

[1] Peak daily discharge values do not account for diversions at RBDD and only represent peak flows registered at the Bend Bridge Gauging station (http://cdec2.water.ca.gov/cgi-progs/queryFx?bnd).

[2] Biweekly totals may be greater than the sum of the daily estimates presented in this table if sampling was not conducted on each day of the biweekly period. A dash (-) denotes those dates. To estimate daily passage for days that were not sampled, we impute missed sample days with the weekly mean value of days sampled within the week.

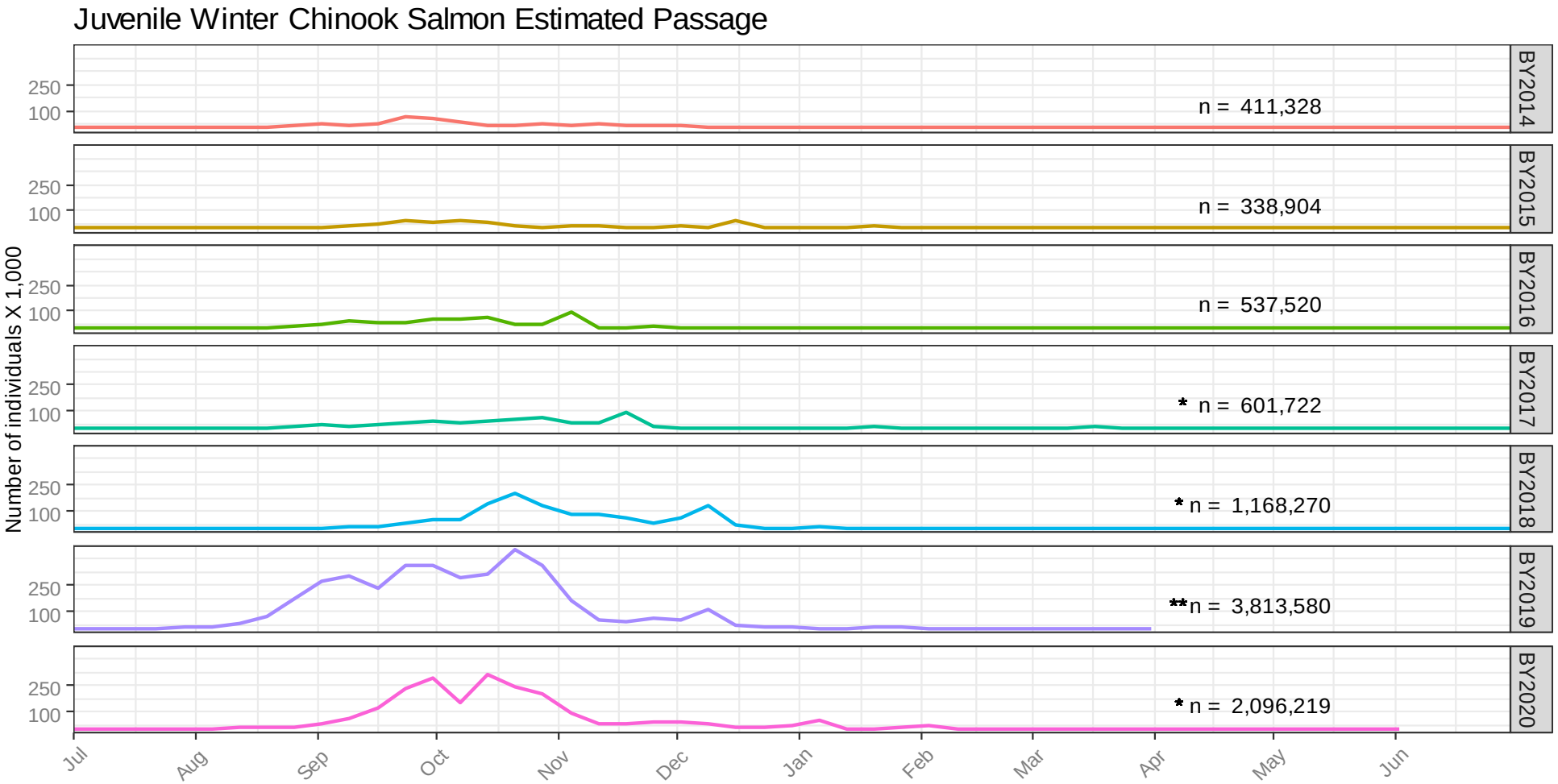

Figure 1. Weekly estimated passage of unmarked juvenile winter Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period July 1, 2014 to present .

*Winter Chinook passage value reflects addition of length-at-date spring Chinook determined to be winter Chinook from genetic analysis during the period of October 16th thru November 18th during brood years 2017 thru 2020. See memos on 2018 & 2019 biweekly report pages for more info .

**Rotary-trapping/juvenile fish monitoring operations at the Red Bluff Diversion Dam were suspended from March 25, 2020 to June 30, 2020, to protect employee health and safety resulting from the Coronavirus/COVID-19 global pandemic .

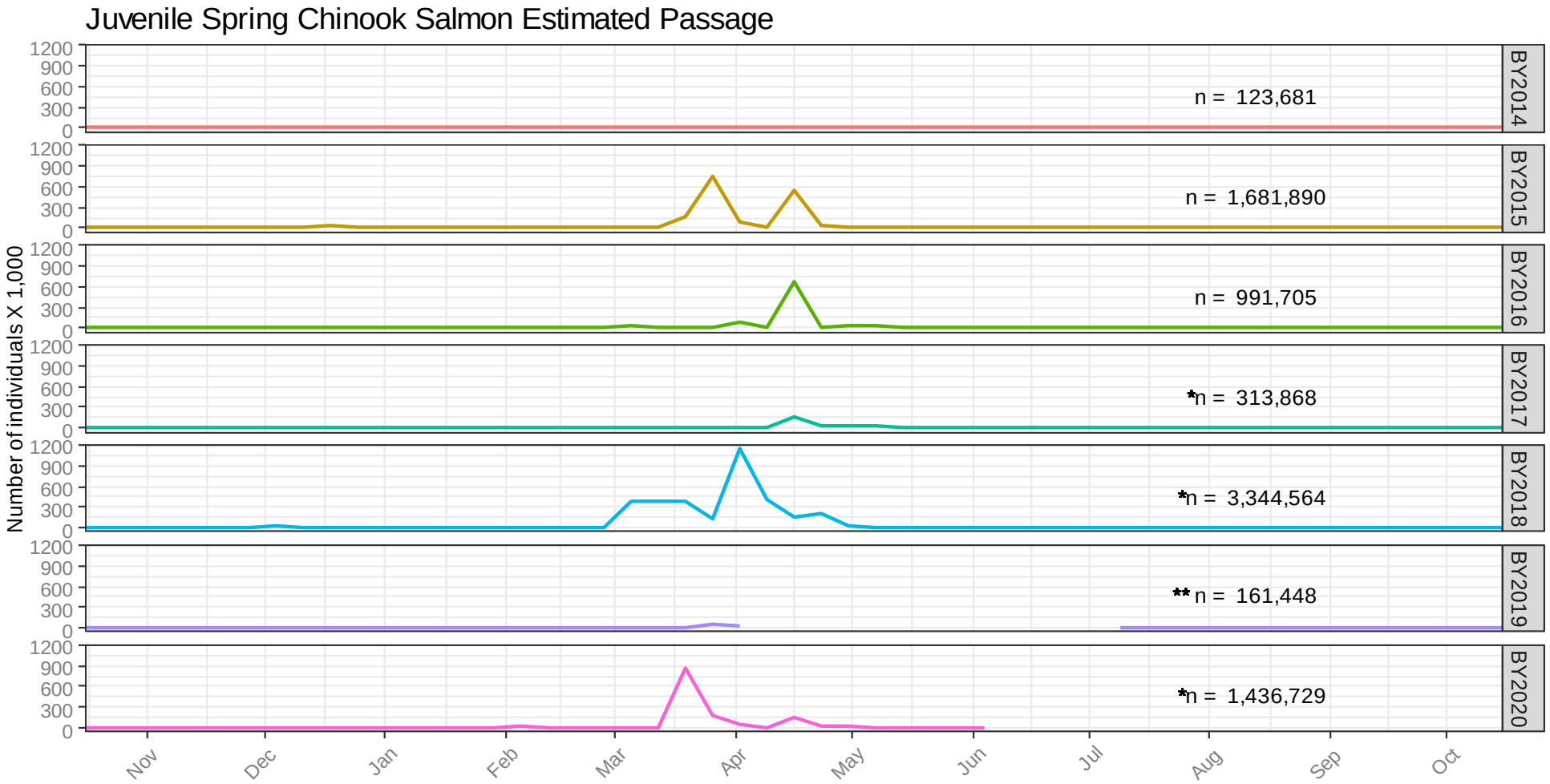

Figure 2. Weekly estimated passage of unmarked juvenile spring Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period October 16, 2014 to present .

*Spring Chinook passage value reflects subtraction of length-at-date spring Chinook determined to be winter Chinook from genetic analysis during the period of October 16th thru November 18th during brood years 2017 thru 2020. See memos on biweekly report website for more info .

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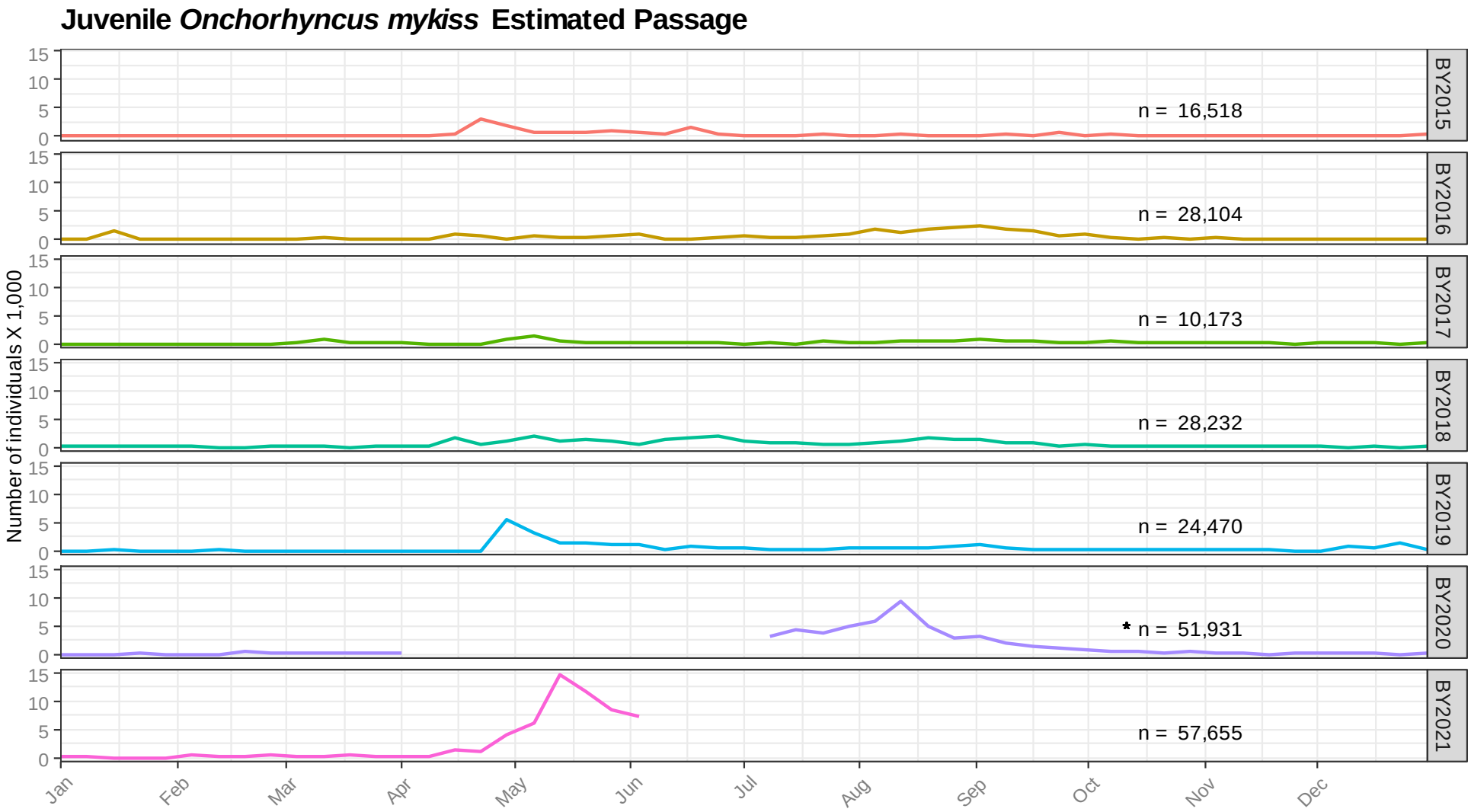

Figure 3. Weekly estimated passage of unmarked juvenile Rainbow/Steelhead trout at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period January 1, 2015 to present .

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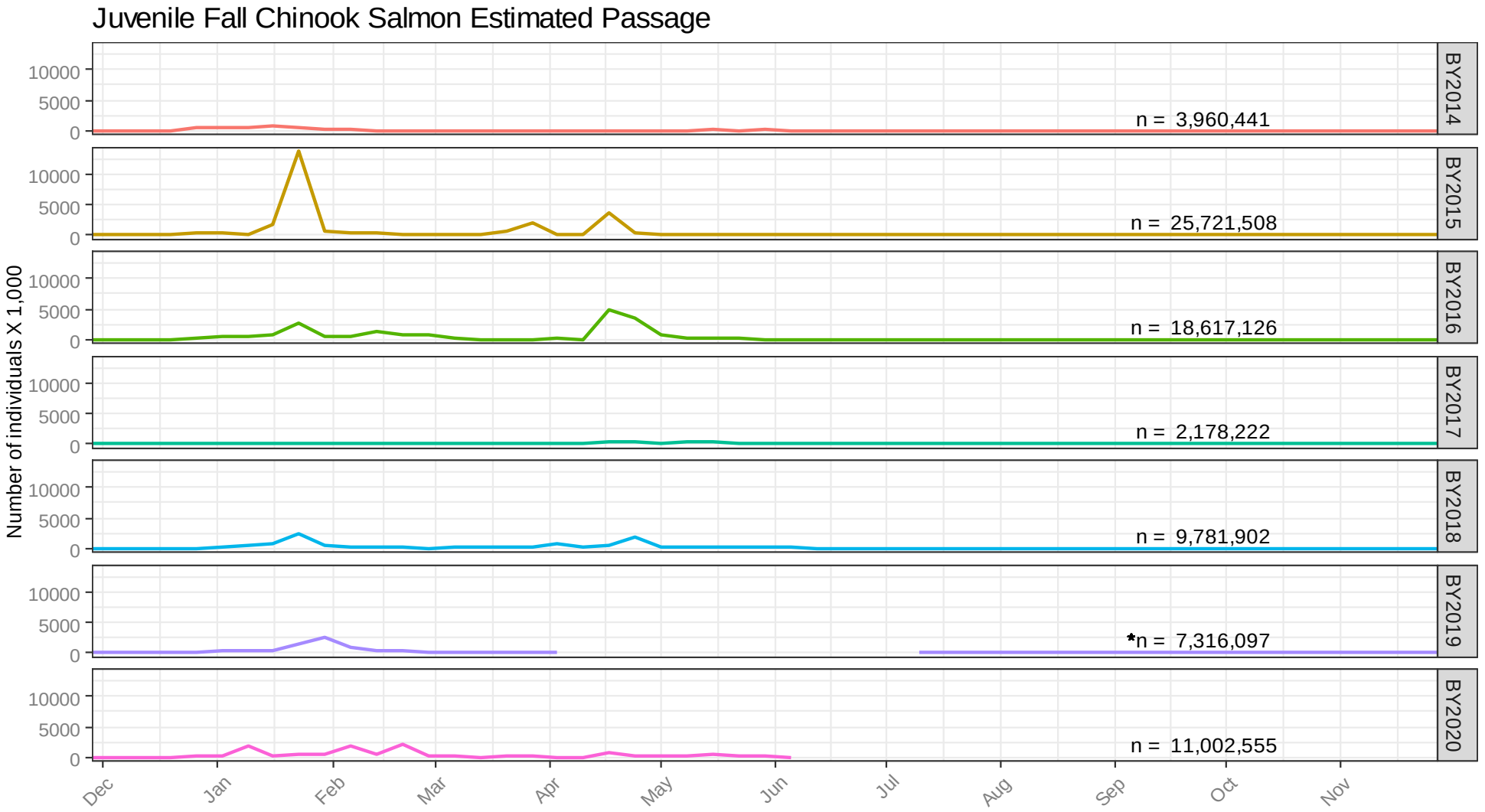

Figure 4. Weekly estimated passage of unmarked juvenile fall Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period December 1, 2014 to present .

*Rotary-trapping/juvenile fish monitoring operations at the Red Bluff Diversion Dam were suspended from March 25, 2020 to June 30, 2020, to protect employee health and safety resulting from the Coronavirus/COVID-19 global pandemic .

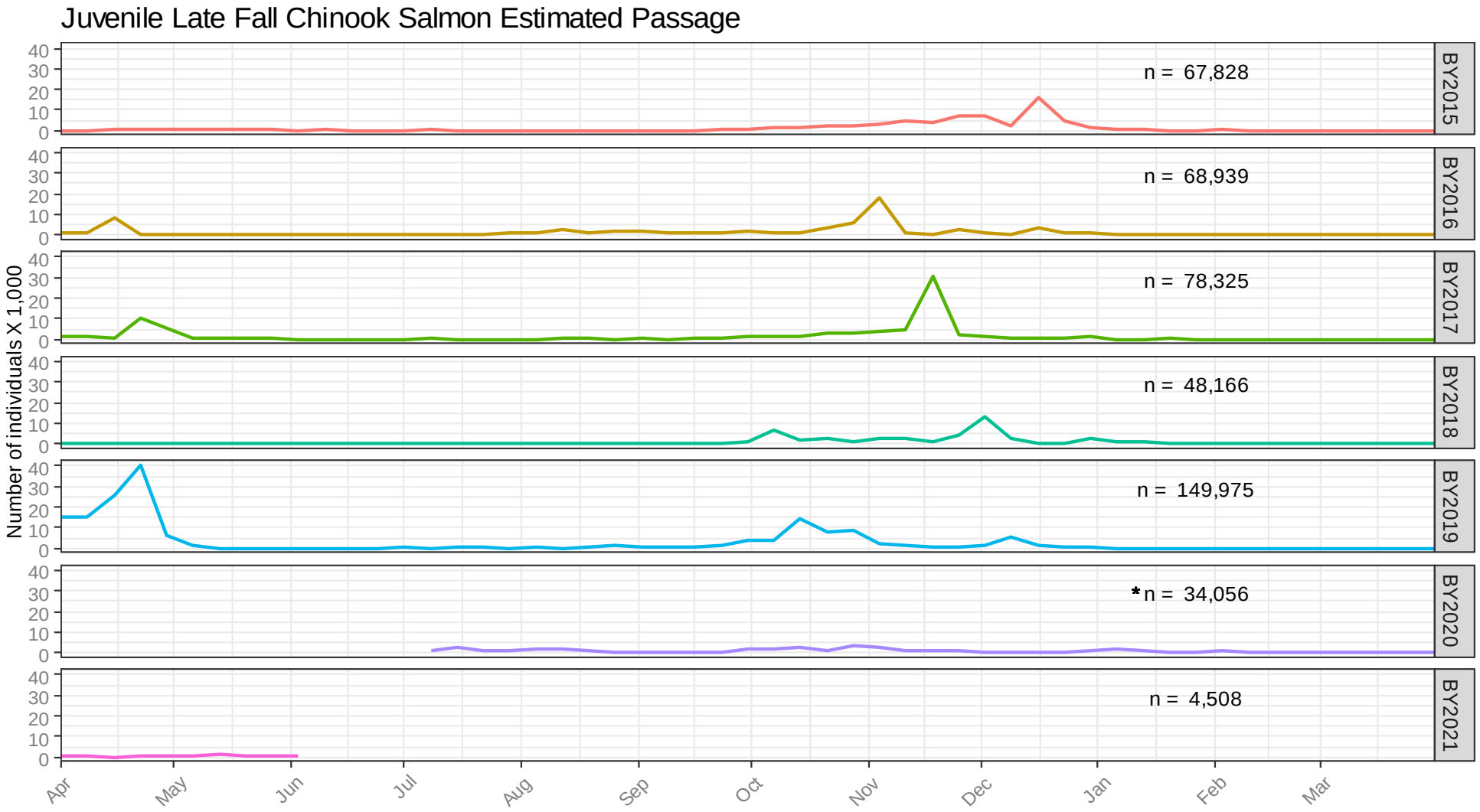

Figure 5. Weekly estimated passage of unmarked juvenile late fall Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period April 1, 2015 to present .

*Rotary-trapping/juvenile fish monitoring operations at the Red Bluff Diversion Dam were suspended from March 25, 2020 to June 30, 2020, to protect employee health and safety resulting from the Coronavirus/COVID-19 global pandemic .

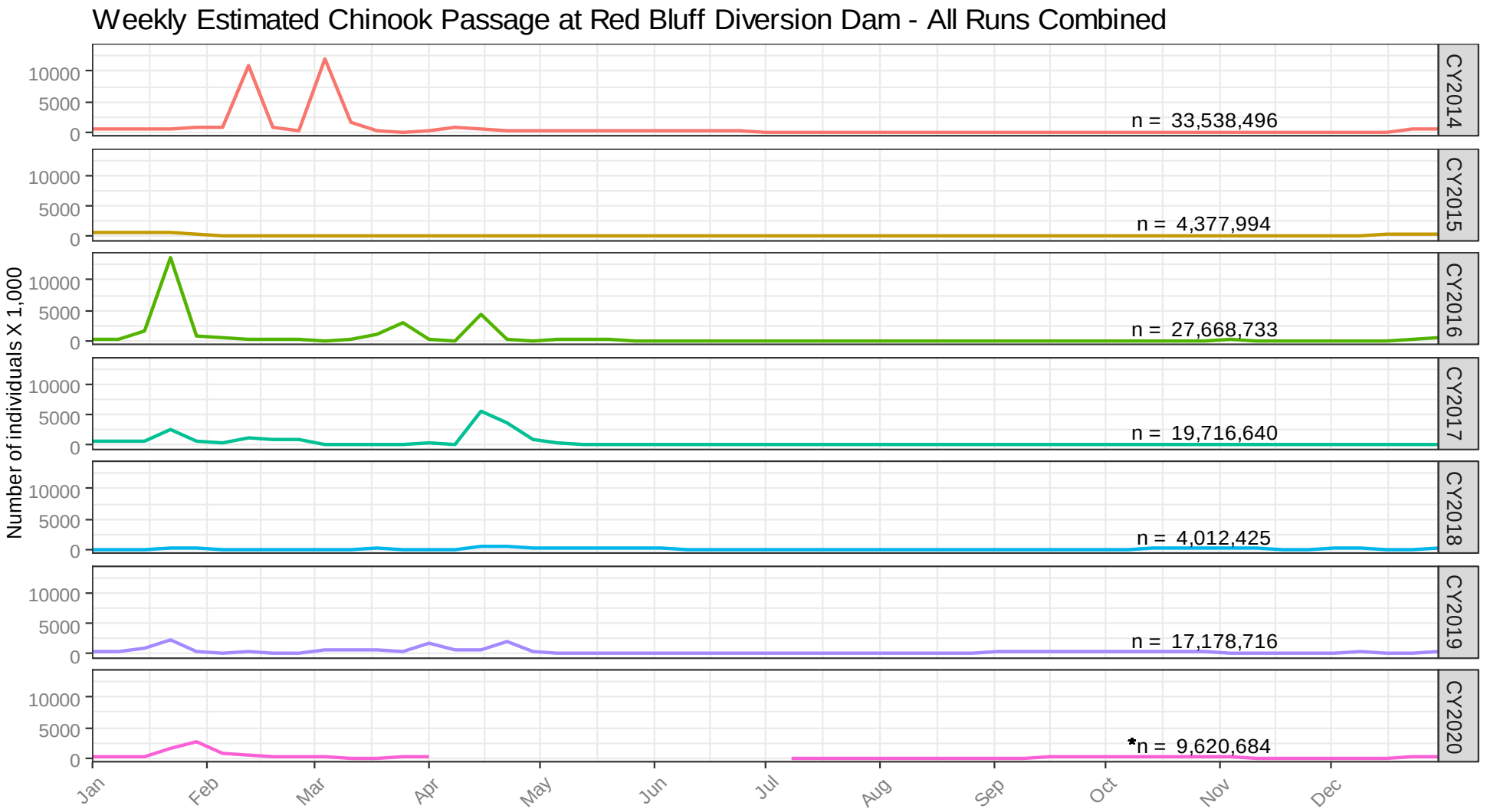

Figure 6. Weekly estimated passage of unmarked juvenile Chinook salmon at Red Bluff Diversion Dam (RK391) by calendar year. Fish were sampled using rotary-screw traps for the period January 1, 2014 to December 31, 2020 .

*Rotary-trapping/juvenile fish monitoring operations at the Red Bluff Diversion Dam were suspended from March 25, 2020 to June 30, 2020, to protect employee health and safety resulting from the Coronavirus/COVID-19 global pandemic .